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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,339	03/18/2004	Jimmy Philip	140272-1	3750
6147	7590	06/22/2005	EXAMINER	
GENERAL ELECTRIC COMPANY GLOBAL RESEARCH PATENT DOCKET RM. BLDG. K1-4A59 NISKAYUNA, NY 12309			JAGAN, MIRELLYS	
			ART UNIT	PAPER NUMBER
			2859	

DATE MAILED: 06/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/802,339	<b>Applicant(s)</b> PHILIP ET AL.	
	<b>Examiner</b> Mirellys Jagan	<b>Art Unit</b> 2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 22-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 13-21 is/are rejected.
- 7) ☒ Claim(s) 11 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/16/04</u> . | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-21, drawn to a thermistor probe assembly and a positioning device for centering a thermistor element within a thermistor probe assembly, classified in class 374, subclass 185.
  - II. Claims 22-31, drawn to a method for positioning a thermistor element in a probe assembly and manufacturing a thermistor probe assembly, classified in class 338, subclass 226.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed in Invention I can be made by another and materially different process, such as a process not requiring disposing a moisture proof shield, or a material coating and a molding material, as claimed in Invention II.

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3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Mr. William Powell on June 15, 2005, a provisional election was made without traverse to prosecute the invention of Group I, claims 1-21. Affirmation of this election must be made by applicant in replying to this Office action. Claims 22-31 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

#### *Claim Objections*

6. Claims 15 and 16 are objected to because of the following informalities:

There is lack of antecedent basis in the claims for the “conductor material”. It appears that claims 15 and 16 should depend on claim 7 instead of claim 6. Appropriate correction is required.

*Claim Rejections - 35 USC § 102*

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3, 5-7, 9, and 16 are rejected under 35 U.S.C. 102(a) as being anticipated by U.S. Patent Application Publication 2003/0147452 to Adachi et al [hereinafter Adachi].

Adachi discloses an assembly comprising:

a ceramic thermistor element (10) having a square-shaped profile;

at least two lead wires (30/40) extending from the thermistor element;

a metal conductor material (70) coupled to the thermistor element via the at least two lead wires;

an insulating material (90) disposed over the conductor material; and

a positioning device (50) for positioning the thermistor element at a predetermined location within the assembly;

wherein the positioning device is made of a resin material; the location is at a central location within the assembly; the lead wires are welded to the conductor material; and the lead wires comprise a metal (see figures 1-3; and paragraphs 52-57).

9. Claims 1, 5, 6, and 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,338,571 to Chen.

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Referring to claims 1, 5, and 6, Chen discloses an assembly comprising:

- a thermistor element (24);
- a positioning device (30) for positioning the thermistor element at a predetermined location within the assembly;
- at least two lead wires extending from the thermistor element; and
- a moisture-proof shield disposed to cover the thermistor element and the positioning device, the shield comprising a molding material (23) disposed over the element and the positioning device; wherein the location is at a central location within the assembly.

Referring to claims 19-21, Chen discloses a positioning device comprising:

- a cavity extending through the device and adapted (at 33) for receiving a thermistor element;
- at least three lobes (32) adapted to (using 211) position the thermistor element within the assembly (22); and
- a groove (31) positioned between two of the lobes for adjusting a dimension of the cavity (changes the diameter of the positioning device so that it can fit within different sized assemblies) and configured to provide a path for filling the cavity with a material (23) (see figures 2 and 3; and column 2, lines 33-65).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi in view of U.S. Patent Application Publication 2003/0058920 to Lyle.

Adachi discloses an assembly having all of the elements of claim 4, as stated above in paragraph 8, except for the material of the positioning device being made of PVC or polybutylene terephthalate.

Lyle discloses a thermistor probe assembly having a thermistor and lead wires connected to the thermistor and to conductor material for obtaining temperature measurements from the thermistor. The thermistor and lead wires are encased in a resin made of polybutylene terephthalate. Lyle teaches that polybutylene terephthalate is a useful material for providing an insulating resin in a thermistor probe assembly (see figure 2; paragraph 21).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the assembly of Adachi by making the positioning device of polybutylene terephthalate, since Lyle teaches that polybutylene terephthalate is a useful resin material for use in a thermistor probe assembly, and since the courts have held that a selection of a material on the basis of suitability for intended use of an apparatus would be entirely obvious. See *In re Leshin*, 125 USPQ 416 (CCPA 1960).

12. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi in view of U.S. Patent 4,548,780 to Krohn.

Adachi discloses an assembly having all of the elements of claim 8, as stated above in paragraph 8, except for the material of the conductor material being brass.

Krohn discloses a thermostatic probe assembly having a sensing element and lead wires connected to a conductor material (12) for obtaining thermal signals and connecting to electrical circuitry. The conductor material is made of brass for connecting the assembly to appropriate electrical circuitry (see column 2, lines 49-51).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the assembly of Adachi by making the conductor material of brass, since Krohn teaches that brass is a useful material for a conductor material in a probe assembly, and since the courts have held that a selection of a material on the basis of suitability for intended use of an apparatus would be entirely obvious See *In re Leshin*, 125 USPQ 416 (CCPA 1960).

13. Claims 7, 9, 10, 13, 14, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of U.S. Patent 6,305,841 to Fukaya et al [hereinafter Fukaya].

Chen discloses an assembly having all of the elements of claims 7, 9, 10, 13, 14, 16, and 17, as stated above in paragraph 9, but is silent as to the overall structure of the probe assembly beyond the probe tip, and therefore does not disclose the lead wires being coupled to an insulated conductor material, wherein the molding material is compatible with the insulating material of the conductor material, the conductor material is welded to the lead wires, and the lead wires comprise steel.

Fukaya discloses a thermistor probe assembly having a thermistor and attached lead wires at the probe tip. The probe assembly further comprises a conductor material (lead wires 4) coupled to the lead wires of the thermistor by welding for connecting to electrical circuitry to



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obtain temperature measurement from the thermistor signals. The lead wires are made of a metal, such as stainless steel, and the conductor material is covered with insulation (plastic material) in order to protect and strengthen the conductor material (see figure 1; column 4, lines 38-48; and column 6, lines 14-40 and 59-63).

Referring to claim 7, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the assembly of Chen by connecting the lead wires to insulated conductor material, as taught by Fukaya, in order to connect the thermistor to electrical circuitry and obtain temperature measurements from the thermistor signals.

Referring to claim 14, in the assembly of Chen and Fukaya, the molding material is considered to be 'compatible' with the insulating material of the conductor material since both materials are insulators.

Referring to claim 17, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the assembly of Chen and Fukaya by making the lead wires of a metal such as stainless steel since Fukaya teaches that steel is a useful material for making the lead wires in a thermistor probe assembly, and since the courts have held that a selection of a material on the basis of suitability for intended use of an apparatus would be entirely obvious See *In re Leshin*, 125 USPQ 416 (CCPA 1960).

14. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of U.S. Patent Application Publication 2002/0071475 to Betzner et al [hereinafter Betzner].

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Chen discloses an assembly having all of the elements of claim 15, as stated above in paragraph 9, but is silent as to the overall structure of the probe assembly beyond the probe tip, and therefore does not disclose the lead wires being soldered to a conductor material.

Betzner discloses that it is known in the art to connect the lead wires of a thermistor of a probe assembly to a conductor material by soldering them together. The conductor material coupled to the lead wires of the thermistor connects the thermistor to electrical circuitry to obtain temperature measurement from the thermistor signals (see paragraph 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the assembly of Chen by soldering the lead wires to conductor material, as taught by Betzner, in order to securely connect the thermistor to electrical circuitry and obtain temperature measurements from the thermistor signals.

15. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of U.S. Patent Application Publication 2002/0131477 to Kurano.

Chen discloses an assembly having all of the elements of claim 18, as stated above in paragraph 9, except for the lead wires comprising copper.

Kurano discloses a thermistor probe assembly having a thermistor and lead wires connected to the thermistor. Kurano teaches that a metal such as copper is a useful material for making the lead wires, which further connect to a conductor material and to electric circuitry to obtain temperature measurement from the thermistor signals (see figure 1; paragraphs 4-7 and 23).

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the assembly of Chen by making the lead wires of copper, since Kurano teaches that copper is a useful material for making lead wires in a thermistor assembly in order to connect the thermistor to electrical circuitry and obtain temperature measurements from the thermistor signals, and since the courts have held that a selection of a material on the basis of suitability for intended use of an apparatus would be entirely obvious See *In re Leshin*, 125 USPQ 416 (CCPA 1960).

#### ***Allowable Subject Matter***

16. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 12 is allowable for being dependent on allowable claim 11.

17. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not disclose or suggest the following in combination with the remaining limitations of the claims:

A thermistor probe assembly comprising a moisture proof shield disposed over the conductor material (see claim 11).

#### ***Conclusion***

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents and publication disclose a thermistor element supported within a probe by a positioning device:

U.S. Patent 5,720,556 to Krellner

U.S. Patent 6,127,915 to Gam et al

U.S. Patent 6,639,505 to Murata et al

U.S. Patent 6,676,290 to Lu

U.S. Patent 4,538,927 to Jochemczyk et al

U.S. Patent Application Publication 2002/0172258 to Adachi et al

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mirellys Jagan whose telephone number is 571-272-2247. The examiner can normally be reached on Monday-Friday from 11AM to 5PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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MJ  
June 17, 2005



**Mirellys Jagan**  
**Patent Examiner**  
**Technology Center 2800**